June 14, 1972
Preliminary Copy
University of Idaho
Soil Conservation Service

Tilma Silt Loam 71 Ida 0520

General Site Characteristics

Location -- Benewah County, Idaho, 1,340 feet east and 2,540 feet south of northwest corner, section 27, T. 45 N., R. 5 W., photo 4V-13; described -- October 6, 1971, by M. A. Fosberg, Elbert Moore, and Art Kreger; topography -- loess sheet, upper one-third, hill, convex, 17 per cent slope, 200 feet, slope, south facing; elevation -- 2,640 feet; parent material -- loess; climate -- average mean annual precipitation is 20-23 inches, mean annual soil temperature is 48-51°F., frost free period is 140-160 days; drainage -- moderately well; vegetation or use -- cultivated field of lentils; classification -- typic Palexeroll, fine, montmorillonitic, mesic.

Pedon Description

Ap 0-7 inches. Dark grayish brown (10YR 4.4/2) silt loam, very dark brown (10YR 2.3/2) moist; weak, medium and fine subangular blocky structure breaking to weak, medium and fine granular structure; soft, friable, slightly sticky and slightly plastic; common fine and medium interstitial pores; few very fine and fine roots; clear smooth boundary.

A12 7-13 inches. Dark grayish brown (10YR 4.4/2) silt loam, very dark brown (10YR 2.4/2) moist; moderate medium subangular blocky structure breaking to moderate medium and fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; common medium and fine tubular pores; few very fine and fine roots; krotovina two inches by one and one-half inches in the middle of horizon, lighter colored, pedo tubulars in horizon; clear smooth boundary.

B1 13-16 inches. Grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common medium and fine pores; few very fine and fine roots; clear smooth boundary.

B2 16-23 inches. Pale brown (10YR 6/3) silt loam, dark brown to brown (10YR 4/3) moist; moderate medium and coarse angular and subangular blocky structure; slightly hard, firm, slightly sticky and plastic; common very fine and fine vesicular pores; few very fine and fine roots; abundant bleachings on ped surfaces and interiors, pedo tubulars in horizon; clear wavy boundary.

A'2 23-29 inches. Very pale brown (10YR 7/3) silt loam, grayish brown (10YR 5/2.6) moist; massive; slightly hard, firm, non-sticky and non-plastic; common fine and medium interstitial pores; very few very fine and fine roots; few fine and medium (1-2 mm) iron and manganese concretions; clear wavy boundary.

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B'21t 29-39 inches. Yellowish brown (10YR 5/4) silty clay loam, brown (7.5YR 5/4) moist; moderate and strong medium and coarse prismatic structure breaking to moderate and strong medium and coarse angular blocky structure; very hard, very firm, sticky and plastic; common fine and medium interstitial pores; very few very fine and fine roots at ped surfaces; many thick clay films; common fine and medium iron and manganese concretions, manganese stains and pressure faces on peds, abundant bleachings on interior and exterior of peds; gradual wavy boundary.

B'22t 39-50 inches. Very pale brown (10YR 7/3) coatings, yellowish brown (10YR 5/4) interior, silty clay loam, yellowish brown (10YR 5/4) moist; moderate and strong medium and coarse prismatic structure breaking to moderate and strong medium and coarse angular and subangular blocky structure; very hard, very firm, sticky and plastic; common medium and fine interstitial pores; common moderately thick clay films; one gravel (quartzite) at 42", one gravel at 45" (quartzite) rounded, organic stains on exterior of peds, many fine and medium concretions, manganese stains and pressure faces on peds; gradual wavy boundary.

B'23t 50-62 inches. Brown (7.5YR 5/4) silt loam, brown (7.5YR 5/4) moist; moderate and strong medium and coarse platy structure (appears to be massive in places); very hard; very firm, slightly sticky and slightly plastic; many moderately thick clay films; common medium and fine interstitial pores.

Chemical characterization and physical analysis of profile Tilma Silt Loam
71 Ida 0520

Date: May 30, 1972

No.	Horizon	Depth in.	pH Paste	pH 1:5	$EC \times 10^3$	Saturation extract me/1000 gms soil							
						Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4
1	Ap	0-7	5.90		0.23								
2	A12	7-13	6.10		0.19								
3	B1	13-16	6.30		0.17								
4	B2	16-23	6.40		0.19								
5	A'2	23-29	6.45		0.16								
6	B'21t	29-39	5.90		0.20								
7	B'22t	39-50	6.65		0.24								
8	B'23t	50-62	7.45		0.24								

Exchangeable ions me/100 gms					C.E.C.	Base	Gyp.	$CaCO_3$		C	O.M.	N		Pw at	Soil:Rx
Ca	Mg	Na	K	H	me/100	Sat.%	%	%	E.S.P.	%	%	%	C:N	sat.	Ratio
1.25	1.88	0.10	0.60	6.28	17.91	61.62			0.56	2.14	3.69	0.135	15.85	48.0	None
1.45	2.92	0.10	0.75	5.75	20.90	47.58			0.48	1.49	2.55	0.128	11.64	52.8	None
1.35	3.54	0.15	0.66	4.71	18.71	54.76			0.80	0.96	1.65	0.092	10.44	48.8	None
1.18	3.33	0.15	0.48	3.66	16.62	58.41			0.90	0.55	0.95	0.070	7.86	48.0	None
0.95	1.98	0.20	0.20	2.09	10.95	61.44			1.83	0.26	0.44	0.032	8.13	42.2	None
2.05	7.08	0.70	0.34	5.75	30.95	63.88			2.26	0.25	0.42	0.031	8.07	54.0	None
2.15	6.88	0.80	0.32	4.18	29.65	70.83			2.70	0.20	0.34	0.032	6.25	57.6	None
1.60	4.58	0.65	0.20	1.31	19.60	84.29			3.32	0.06	0.10	0.017	3.53	43.6	None

Reference for data: Dr. Maynard A. Fosberg
Department of Agricultural Biochemistry and Soils
University of Idaho
Moscow, Idaho 83843

Analyzed by: Anita Falen

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No.		Particle size distribution (mm) (percent) VCS 2-1.0	CS 1-0.5	MS 0.5-0.25	FS 0.25-0.05	VFS 0.1-0.05	TS	TSi 0.05-0.002	TC < 0.002	Gravel & Stone, etc. > 2mm	Texture Class
1	0-7	0.04	0.07	0.05	0.82	6.41	7.40	72.47	20.12	None	Silt Loam
2	7-13	0.02	0.06	0.04	0.86	5.86	6.87	69.07	24.04	None	Silt Loam
3	13-16	0.02	0.06	0.06	0.91	5.41	6.48	68.86	24.64	None	Silt Loam
4	16-23	0.05	0.10	0.11	1.08	5.18	6.53	72.11	21.34	None	Silt Loam
5	23-29	0.09	0.17	0.11	0.79	7.07	8.25	79.79	11.95	None	Silt Loam
6	29-39	0.05	0.12	0.06	0.25	4.19	4.68	59.88	35.43	None	Silty Clay Loam
7	39-50	0.03	0.20	0.10	0.37	5.29	6.01	62.48	31.50	None	Silty Clay Loam
8	50-62	0.12	0.32	0.22	0.50	6.91	8.08	76.55	15.35	None	Silt Loam

REMARKS: Centrifuge Method
Calgon Added
Carbonates not Present

No.	CSi	MSi	FSi
1	40.91	28.60	2.94
2	37.93	28.11	3.02
3	37.25	28.35	3.26
4	40.14	28.79	3.18
5	47.81	28.65	3.32
6	33.09	24.12	2.65
7	34.48	24.06	3.93
8	44.56	26.82	5.16

REFERENCE FOR DATA:

Dr. Maynard Fosberg
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ANALYSIS BY:

Anita L. Falen